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In the Claims

Please cancel claims 76-79, 81 and 83-84 without prejudice to applicants' right to pursue the subject matter of these claims in this or a subsequent application.

Please amend the claims by replacing all prior versions of the claims with the listing of claims below pursuant to 37 C.F.R. §1.121 as modified by 68 Fed. Reg. 38611 (June 30, 2003).

1-66. (Cancelled)

67. (Currently Amended) An isolated nucleic acid molecule comprising a nucleotide sequence encoding a polypeptide having starch synthase activity or a nucleotide sequence complementary thereto; said nucleotide sequence selected from the group consisting of:

- (i) a nucleotide sequence having at least 85% 97% identity to the nucleotide sequence of the protein-encoding region of the nucleotide sequence set forth in SEQ ID NO: 3;
- (ii) a nucleotide sequence encoding a polypeptide having at least 85% 97% identity to the amino acid sequence set forth in SEQ ID NO: 4; and
- (iii) a nucleotide sequence which is complementary to (i) or (ii).

68. (Currently Amended) The isolated nucleic acid molecule according to claim 67 wherein the ~~wheat~~ starch synthase polypeptide comprises one or more amino acid sequences selected from the group consisting of:

- (a) ~~KVGGELGDVVTS~~;
- (b) ~~GHTVEVILPKY~~;
- (c) ~~HDWSSAPVAVLYKEHY~~;

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69. (Previously Presented) The isolated nucleic acid molecule of claim 68 wherein the starch synthase polypeptide comprises at least three of said amino acid sequences selected from the group of (a) to (h).
70. (Currently Amended) The isolated nucleic acid molecule of claim 68 wherein the starch synthase polypeptide comprises at least six of said amino acid sequences selected from the group consisting of ~~(i) to (p)~~ (a) to (h).
71. (Previously Presented) The isolated nucleic acid molecule of claim 67 wherein the polypeptide is a wheat starch synthase II polypeptide.
72. (Currently Amended) The isolated nucleic acid molecule of claim 68 wherein the starch synthase polypeptide further comprises one or more amino acid sequences selected from the group consisting of:

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(a) GHTVEVILPKY;  
(b) HDWSSAPVAWLKYKEHY;  
(c) DVPIVGIITRLTAQKG;  
(d) NGQVVLGSA;  
(e) AGSDFIIVPSIFEPGGLTQLVAMRYGS;  
(f) TGGLVDTV;  
(g) (a) GIVNGIDNMEWNPEVD (SEQ ID NO:50); and  
(h) (b) AGADALLMPSRF(E/V)PCGLNQLYAMAYGT  
(SEQ ID NO: 53).

73. (Currently Amended) The isolated nucleic acid molecule of claim 71 which encodes a polypeptide which comprises an amino acid sequence selected from the group consisting of SEQ ID NO: 2, wherein the polypeptide has the amino acid sequence set forth in SEQ ID NO: 4, and SEQ ID NO: 6.

74. (Previously Presented) A probe or primer comprising at least 15 contiguous nucleotides of the isolate nucleic acid molecule of claim 67.

75. (Currently Amended) The probe or primer of claim 74 comprising a nucleotide sequence selected from the group of:  
(i) the nucleotide sequence set forth in SEQ ID NO: 25;  
(ii) (i) the nucleotide sequence set forth in SEQ ID NO: 26;  
(iii) (ii) the nucleotide sequence set forth in SEQ ID NO: 27;  
(iv) the nucleotide sequence set forth in SEQ ID NO: 28;  
(v) (iii) a nucleotide sequence which encodes an amino acid sequence selected from the group consisting of:  
(a) KVGGLGDVVTS;  
(b) GHTVEVILPKY;  
(c) HDWSSAPVAWLKYKEHY;  
(d) GILNGIDPDIWDPYTD;

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- (e) DVPIVGIIITRLTAQKG;
- (f) NGQVVLLGSA;
- (g) AGSDPFIIVPSIFEPGGLTQLVAMRYGS;
- (h) TGGLVDTV;
- (i) (a) KTGGGLGDVAGA (SEQ ID NO: 47);
- (j) (b) GHRVMVVVPRY (SEQ ID NO: 48);
- (k) (c) NDWHTALLPVYLKAYY (SEQ ID NO: 49);
- (l) (d) GIVNGIDNMMEWNPEVD (SEQ ID NO: 50);
- (m) (e) DVPLLGFIGRLDGQKG (SEQ ID NO: 51);
- (n) (f) DVQLVMLGTG (SEQ ID NO: 52);
- (o) (g) AGADALLMPSRF(E/V)PCGLNQLYAMAYGT  
          (SEQ ID NO: 53); and
- (p) (h) VGG(V/L)RDTV (SEQ ID NO: 54); and
- (xvii) (iv) a nucleotide sequence which is complementary to any one of (i) to (v) (iii).

76-79. (Cancelled)

80. (Currently Amended) A method of modifying the starch content and/or starch composition of one or more tissues or organs of a plant, said method comprising the step of expressing in said plant a nucleic acid molecule for a time and under conditions sufficient for the enzyme activity of one or more starch synthase isoenzymes to be modified, wherein said nucleic acid molecule is selected from the group consisting of:

- (i) the isolated nucleic acid molecule ~~according to of~~  
claim 67; and
- (ii) an antisense molecule or a co-suppression molecule  
which comprises a fragment of (i) which ~~comprises a~~  
nucleotide sequence which is expressed to down-  
regulate the expression of an endogenous ~~wheat~~ starch  
synthase isoenzyme of said plant ~~and~~

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~~iii) a fragment of (I) which encodes a functional wheat starch synthase isoenzyme of said plant.~~

81. (Cancelled)

82. (Currently Amended) The method of claim 80 further comprising introducing the nucleic acid molecule to an isolated plant cell, tissue, or organ, or organelle and regenerating the plant from the cell, tissue or organ.

83-84. (Cancelled)

85. (Currently Amended) The method of claim 82 wherein the nucleic acid molecule is introduced to the plant cell, tissue, or organ or organelle by transformation.

86. (Currently Amended) A transgenic plant comprising the isolated a nucleic acid molecule of claim 67 comprising a nucleotide sequence, said nucleotide sequence selected from the group consisting of:

- (i) a nucleotide sequence encoding a polypeptide having starch synthase activity having at least 97% identity to the nucleotide sequence of the protein-encoding region of the nucleotide sequence set forth in SEQ ID NO: 3;
- (ii) a nucleotide sequence encoding a polypeptide having starch synthase activity the polypeptide having at least 97% identity to the amino acid sequence set forth in SEQ ID NO: 4;
- (iii) a nucleotide sequence which is complementary to (i) or (ii); and
- (iv) an antisense molecule or co-suppression molecule which comprises a fragment of (i), (ii) or (iii) which is

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expressed to down-regulate the expression of an endogenous starch synthase isoenzyme of the plant.

87. (Currently Amended) A progeny plant of the transgenic plant of claim 86 wherein said progeny plant comprises the nucleic acid molecule ~~of claim~~ 67.
88. (Currently Amended) A propagule of the transgenic plant of claim 86 wherein said propagule comprises the nucleic acid molecule ~~of claim~~ 67.
89. (Currently Amended) A gene construct or vector which comprises the isolated nucleic acid molecule of claim 67 and one or more origins of replication.
90. (Currently Amended) The gene construct ~~according to of~~ claim 89 further comprising a promoter sequence in operable connection with said isolated nucleic acid molecule.
91. (Currently Amended) A gene construct or vector which comprises the probe or primer ~~according to of~~ claim 74 and one or more origins of replication.